

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An optical coherence tomography system

comprising:

[[-]] an optical source to emit an optical beam;

[[-]] a sample space;

[[-]] a photodetector;

[[-]] an interferometer set-up including

[[-]] a reference reflector, and

[[-]] a beam splitter-combination arrangement to

split the optical beam into a reference beam to the reference reflector and a sample beam to the sample space, and to

combine a reflected beam from the reference reflector with a returning beam from the sample space on-to form a combined beam, and provide the combined beam to a first

port of the photodetector, and
a further beam splitter configured to receive part of a
radiation from the beam splitter-combination arrangement and to
couple out an output beam to a second port of the photodetector;

wherein

[[-]] the optical source has an emission wavelength in the range of 1.6 μ m to 2.0 μ m, associated with a transition between an upper energy level and a lower energy level, and

[[-]] the optical source comprises an excitation system which generates stimulated emission from a pump level to the upper energy level.

2. (Currently Amended) ~~An~~ The optical coherence tomography system as claimed in Claim 1, wherein the optical source includes a Tm-doped ~~fibre~~ fiber placed in an optical cavity of cavity reflectors facing one another.

3. (Currently Amended) ~~An~~ The optical coherence tomography system as claimed in Claim 2, wherein the cavity reflectors are anti-reflex coated for a wavelength range of 760nm to 810nm.

4. (Currently Amended) ~~An~~ The optical coherence tomography system as claimed in Claim 2, wherein the cavity reflectors have a high-reflectivity for the wavelength range 2.2 μ m to 2.4 μ m.

5. (Currently Amended) ~~An~~ The optical coherence tomography system as claimed in Claim 2, wherein the cavity reflectors have a high-reflectivity for the wavelength range 2.2 μ m to 2.4 μ m and/or for the wavelength range 1.40 μ m to 1.5 μ m.

6. (Currently Amended) ~~An~~ The optical coherence tomography system as claimed in Claim 2, wherein the optical cavity has reflectivities less than 0.04 for the wavelength range of 1.6-2.0 μ m.

7. (Currently Amended) ~~An~~ The optical coherence tomography system as claimed in Claim 6, wherein

[[-]] an input cavity reflector has a high reflectivity
~~(coating)~~ for the wavelength range 1.6 μ m to 2.0 μ m; and

[[-]] an output cavity reflector has a low-reflectivity

PATENT

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~~(coating)~~ for the wavelength range 1.6 μ m to 2.0 μ m.

Claims 8-9 (Canceled)